Mendel and His Peas

History of Genetics

* Gregor \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ - Known as the “ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of Genetics”
* Austrian monk – tended \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ at monastery
* Experimented with \_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to try and find a pattern to the way characteristics are passed from generation to generation.

Why study pea plants?!

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
5. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
6. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

What traits did Mendel Study?

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
5. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
6. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Mendel’s First Experiments

* Crossed 2 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ pea plants RESULTS = ALL \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ pea plants

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* Mendel called these plants \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ because they produced offspring with the same physical traits as parent plants.

Mendel’s Second Experiments

* Crossed \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ plant with \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ plant RESULTS = ALL \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ plants.
* Crossed 2 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ pea plants RESULTS = some \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and some \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ pea plants.
  + Mendel called these plants \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ because they can produce offspring that can have the dominant form of the trait **OR** the recessive form of the trait.
  + To be able to identify different generations from another, Mendel began naming generations:

Original plants = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1st offspring of parent plants = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2nd offspring = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Mendel’s Conclusions

1. Alternate version of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (alleles) cause \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in inherited characteristics among offspring.
2. For each \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, every organism inherits one allele from each \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
3. If \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ alleles are different, the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ allele will be fully expressed;

the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ allele will have no noticeable effect on offspring’s appearance.

Mendel’s Law’s

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_: the 2 alleles for each trait \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ during gamete

formation.

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_: Each pair of alleles segregates (separates)

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ during gamete formation

